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In the claims:

1.   (currently amended) A method comprising:

determining a location of a line of memory to be cached in a cache partitioned into a plurality of cache sections;

determining a section for the line of memory as one of the plurality of cache sections, based on the location of the line of memory as applied against a memory line location-dependent cache allocation policy, the policy specifying which lines of memory are to be allocated to and stored at which of the plurality of cache sections based on the locations of the lines of memory; and,

storing the line of memory in the section determined.

2.   (original) The method of claim 1, further comprising dynamically adjusting a size of each of the plurality of cache sections.

3.   (original) The method of claim 2, wherein dynamically adjusting the size of each of the plurality of cache sections comprises dynamically adjusting the size of each of the plurality of cache sections based on one or more of: utilization of each of the plurality of cache sections; and, fullness of each of the plurality of cache sections.

4.   (original) The method of claim 1, further comprising dynamically adjusting the memory line location-dependent cache allocation policy.

5.   (currently amended) The method of claim 4, wherein dynamically adjusting the memory line location-dependent cache allocation policy comprises dynamically adjusting the memory line location-dependent cache allocation policy based on one-or-more-of: temporal locality of memory

line locations allocated to each of the plurality of cache sections; ~~and, reutilization of memory line~~ ~~locations allocated to each of the plurality of cache sections~~.

6.   (original) The method of claim 1, wherein determining the location of the line of memory to be

cached comprises examining an address of the line of memory.

7.   (original) The method of claim 1, wherein determining the section for the line of memory comprises determining the section of the plurality of cache sections to which the location of the line of memory is allocated according to the memory line location-dependent cache allocation policy.

8.   (original) The method of claim 1, wherein storing the line of memory in the section determined comprises:

        in response to determining that the section is full,

                selecting a replacement line of memory in the section;

                replacing the replacement line of memory with the line of memory in the section;

        otherwise, adding the line of memory to the section.

9.   (original) The method of claim 1, further initially comprising:

        setting a size of each of the plurality of cache sections; and,

        setting the memory line location-dependent cache allocation policy.

10.   (currently amended) The method of claim 1, ~~further initially comprising receiving the line~~ ~~of memory to be cached~~ wherein the plurality of cache sections comprises a first cache section and a second cache section, the first cache section larger than the second cache section, the cache

allocation policy specifying the first cache section for caching lines of memory that have high temporal locality and the second cache section for caching lines of memory that have low temporal locality.

11.   (original) A system comprising:

a cache for caching lines of a plurality of lines of memory including a line to be cached;

a plurality of cache sections into which the cache is partitioned;

an allocation policy specifying which of the plurality of lines of memory are allocated to which of the plurality of cache sections, based on locations of the plurality of lines of memory; and,

a mechanism to determine a section of the plurality of cache sections for the line to be cached based on a location of the line as applied against the allocation policy, and to store the line in the section determined.

12.   (original) The system of claim 11, wherein the plurality of cache sections comprises a first cache section and a second cache section, the first cache section larger in size than the second cache section, the allocation policy specifying that the first cache section stores highly temporally local lines of memory and the second cache section stores lowly temporally local lines of memory.

13.   (original) The system of claim 11, wherein a size of each of the plurality of cache sections is static.

14.   (original) The system of claim 11, wherein the allocation policy is static.

15.   (original) The system of claim 11, wherein a size of each of the plurality of cache sections is dynamic, the mechanism periodically adjusting the size of each of the plurality of cache sections.

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16.   (original) The system of claim 11, wherein the allocation policy is dynamic, the
mechanism periodically adjusting the allocation policy.

17.   (currently amended) An article comprising:

        a computer-readable medium; and,

        means in the medium for determining a section of a plurality of cache sections into which a
cache has been partitioned to store a line of memory to be cached based on a location of the line
of memory as applied against a memory line location-dependent cache allocation policy, and for
storing the line of memory in the section determined, the policy specifying which lines of memory
are to be allocated to and stored at which of the plurality of cache sections based on the locations
of the lines of memory.

18.   (original) The article of claim 17, wherein the means is further for adjusting dynamically a
size of each of the plurality of cache sections based at least on one or more of: utilization of each
of the plurality of cache sections; and, fullness of each of the plurality of cache sections.

19.   (currently amended) The article of claim 17, wherein the means is further for dynamically
adjusting the memory line location-dependent cache allocation policy based at least on one or
more of: temporal locality of memory line locations allocated to each of the plurality of cache
sections; and, reutilization of memory line locations allocated to each of the plurality of cache
sections.

20.   (original) The article of claim 17, wherein the medium is a recordable data storage
medium.